

**Preliminary Structural Project Report
For
Bridge Replacement Project
Structure D-258: SR-190, Big Cottonwood Canyon at Maxfield's
Lodge**



Project Manager: Lisa Wilson

Project Number:

PIN number:

CID number:

FY: 2008

UDOT

Structures Division

Region 2

Prepared by

Daniel Page/ Supplemented by URS

December 2005

Reviewed by Structures Team:

REPORT SUMMARY

Scope of Project:

1. Purpose of Report

This report presents a conceptual overview of a project to replace bridge D-258. This bridge is located in Region 2 on SR-190, up Big Cottonwood Canyon next to Maxfield's lodge in Salt Lake County. This report is intended to convey the need, scope, schedule, budget, and quality control process for the project.

2. Project Information

Region: 2 **Route No.:** SR-190 **Date:** Summer, 2005
Project Name: Bridge Replacement D-258; SR-190, Up Big Cottonwood Canyon next to Maxfield's Lodge
Beg. R.P.: 1.3 **End R.P.:** 1.3
Project Number: _____ **PIN:** _____ **CID:** _____
Project Design: Bridge: UDOT Structures Division;
 Roadway: Region 2 Preconstruction

Project Mgr: Lisa Wilson #(887-3465)

3. Plan:

Replace the existing bridge and adjust the alignment to improve the existing geometry.

URS conducted a Feasibility study to review possible alternatives that would influence the bridge and possibly change the alignment of SR-190. URS led a Feasibility team that evaluated 6 options of the surrounding areas of the bridge. The 6 options for the bridge and the current alignment of SR-190 are listed below:

- 1) **Rehab the current Structure where it currently stands.**
- 2) **Bridge Replacement on the existing alignment.**
- 3) **Bridge Replacement Alternative with a slight offset to the current alignment.**
- 4) **Bridge Replacement, Realign with Bridge on a Tangent**
- 5) **Bridge Replacement, Realign with significant earthwork.**
- 6) **Bridge Replacement, Realignment of Big Cottonwood Creek.**

The Feasibility team which consisted of Local stakeholders, Utilities, Region 2, and UDOT Structures, met to evaluate all the alternatives and come to a mutual understanding of what the best option would be for the bridge and the surrounding areas. URS enlisted the services of a Feasibility expert to bring all sides to the table and come to a logical conclusion for the project.

After meeting with all the interested parties in a day long meeting and running all the options through a Performance Measure Process Matrix, it was concluded the best viable alternative for the bridge and the surrounding areas was to replace the bridge on a slight offset to the north. This option was chosen because of the following reasons: (read supplemental; report by URS, SR-190 Final Feasibility Report for 0D-258).

- Minimal impacts to the traveling public
- Construction time would be reduced, being able to build the bridge off to the side of the existing bridge.
- New alignment would improve the geometry across the bridge
- Benefit to cost ratio
- Minimal environmental impacts (Big Cottonwood Creek).

4. Work items to be completed:

- Remove and Replace existing bridge with a new bridge.
- Offset the existing alignment to the northeast allowing the new bridge to be built with minimal traffic impacts.
- New roadway alignment to tie into the new bridge.

5. Work items to be deferred:

Roadway and safety items beyond what is related to the bridge removal and replacement will not be included.

6. Design Exceptions:

Design Exception is not expected.

7. Maintenance Considerations:

Region 2 Maintenance Station 2433 should be included in the concept development.

8. Construction Considerations:

Limitations of Operations, A+B, CMGC, Precast Bridge Elements, Precast Arch and other specifications should be considered.

9. Risk Analysis: (None anticipated at this time)

10. Development Process:

New or Major Reconstruction	<u> X </u>
Rehabilitation	<u> </u>
Preservation	<u> </u>

Schedule of Project:

To get the best quality and bid prices, it is expected that this project should be advertised no later than October of 2009. Design should take no longer than six months. Construction should be completed in less than 5 months. A tentative schedule is:

- | | | |
|-------------------------------|-------|-------------------|
| 1. Begin Design Phase | | Fall 2007 |
| 2. Advertisement Date | | Fall 2008 |
| 3. Begin of Construction | | Early Spring 2009 |
| 4. Completion of Construction | | Fall/Winter 2009 |

Budget of Project:

1. **Funding Source:** **Bridge Rehabilitation Funds FY09**
 Amount Programmed - \$2,500,000

2. **Cost Estimate:** **\$ 2,100,000**

The approximate scope of the project is to remove and replace the existing structure and offset the existing alignment to the northeast.

Cost Estimate for Replacement of D-258;

D-258, SR-190; Big Cottonwood Canyon at Maxfield's Lodge Structure(s)

Item	Quantity	Unit
Remove Bridge	1	LUMP
Bridge Replacement	2925	SF

Roadway Items (for estimation purposes only)

Item	Quantity	Unit
Roadway Excavation	3500	CY
Granular Borrow	1500	CY
Untreated Base Course	1000	CY
HMA	2500	TON
Utility Relocation	1	LUMP
Right of Way Agreements	1	LUMP
Safety Upgrades	1	LUMP
Signing & Striping	1	LUMP

Miscellaneous Items

MOT	1	LUMP
Mobilization	1	LUMP
Traffic Control	1	LUMP
Public Information Services	1	LUMP

PE/CE 30%

15 % Contingency

Inflation rate 6% over 4 Years

Project Total

\$2,065,247.21

Bridge Location

